



# PROMATEC

PROGRESSIVE MATERIALS AND TECHNOLOGIES, INC.

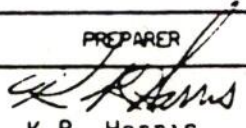
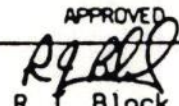
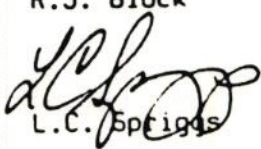
PROCEDURE FOR:

INSTALLATION OF INSULCO/HEMYC PROTECTIVE  
WRAP - STRAIGHT SECTIONS

PROCEDURE NUMBER:

IP-8400.101

## PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A ISSUE 12/04/85	 K.R. Harris	 R.J. Block  L.C. Spriggs	Issue for Construction

9308270273  
PDR ORG

930813  
NRRB  
PDR



INSTALLATION PROCEDURE FOR INSULCO/HEMYC  
PROTECTIVE WRAP SYSTEM  
STRAIGHT SECTIONS OF CABLE TRAY

1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B/PROMATEC CTP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS IE ELECTRICAL CIRCUITS".

2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of INSULCO/HEMYC Protective Wrap systems.

3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin No. 5(79)
- 3.3 HEMYC Test CTP-1026
- 3.4 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS
- 3.5 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS
- 3.6 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS
- 3.7 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS B&B/PROMATEC DRGS B-310, B-311, and B-313

4.0 DEFINITIONS

BASE - slotted and drilled, formed plate used in assembly of locking clamp.

BRACKET - galvanized "C" used in conjunction with a base and U-bolt to make a locking clamp.

FENDER WASHER - a flat washer approximately 1 1/2" O.D. with a small inside hole to slip over rail studs. The function is to prevent or minimize damage wrap by the locknut and to provide more wrap support.





**FRAMEWORK** - an assembly consisting of four struts and four clamps (friction or locking) that surrounds the cable tray, normally spaced on 18" centers.

**FRICTION CLAMP** - pre-galvanized device used to connect framework to cable tray.

**LOCKING CLAMP** - galvanized assembly similar to friction clamp but is tightly bolted to the cable tray to prevent movement of the framework.

**LOCKNUT** - a specially designed, vibration resistant nut having a plastic insert on the threaded portion. These are used primarily on the locking clamp and the rail studs.

**RAIL** - long sections of strut with threaded anchors stud-welded to it. These are attached to the frameworks parallel to the tray. Rails provide anchors to secure the wrap system and add longitudinal support to the framework.

**SPRING NUTS** - a specially designed rhomboid shaped nut with a spring permanently attached that is used to secure clamps to the struts.

**STRUTS** - lightweight, pre-galvanized channel used to provide structural support to the wrap system.

**U-BOLT** - a "U" shaped bolt bent to provide attachment of locking clamp to cable tray.

**WRAP** - a fireproof product consisting of ceramic fiber material sewn into an envelope of fireproof fabric.

## 5.0 RESPONSIBILITY

- 5.1 The authorized installer's **ENGINEERING DEPARTMENT** shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

- 5.2 The authorized installer's **PRODUCTION DEPARTMENT** shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by **ENGINEERING**.
- 5.3 The authorized installer's **PRODUCTION DEPARTMENT** shall be responsible for the performance of installation activities herein prescribed.
- 5.4 The **B&B/PROMATEC ASSURANCE DEPARTMENT** shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the **B&B/PROMATEC Quality Control Procedures**.



The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established B&B/PROMATEC QC Procedures. If this is the case, B&B/PROMATEC QA maintains the responsibility for the QA/AC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

## 6.0 PROCEDURE

### 6.1 Locking Clamp Assembly (See Figure 1)

6.1.1 Attach U-Bolt to base by sliding U-Bolt through slots in base.

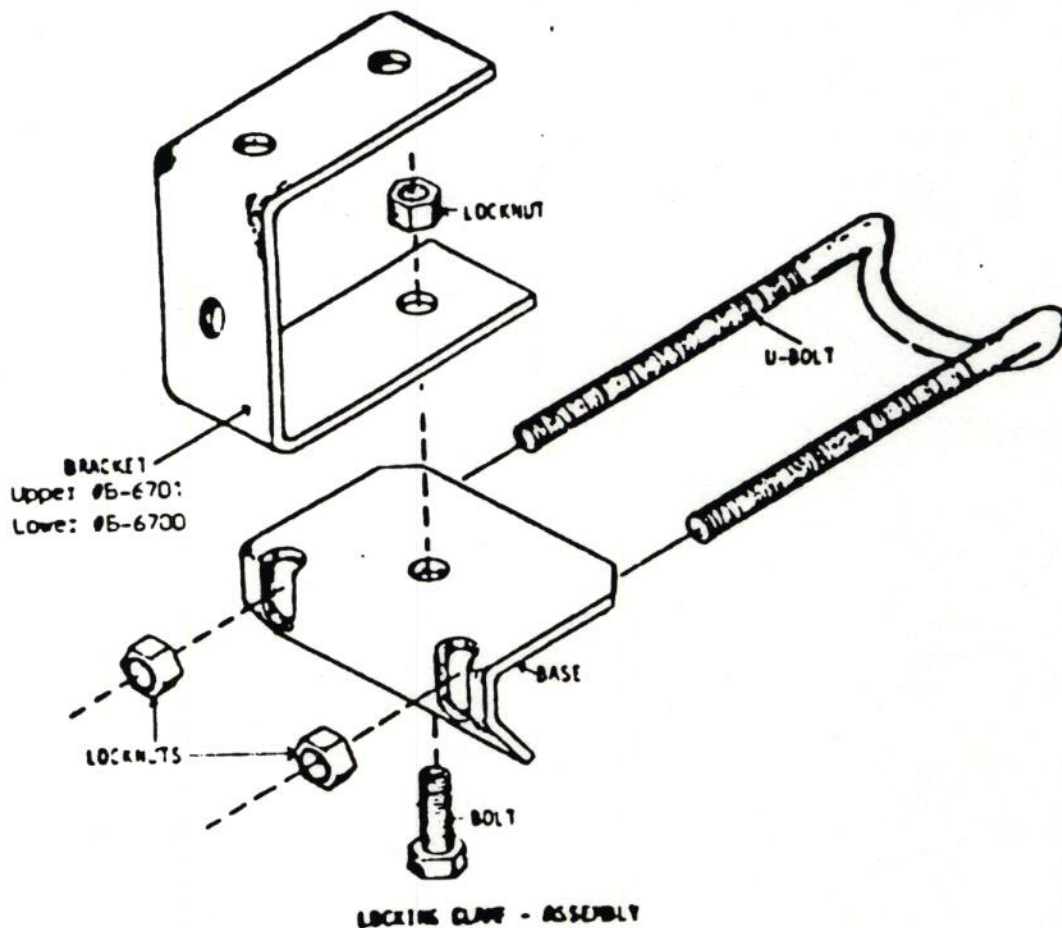


FIGURE 1

6.1.2 Secure U-Bolt by threading locknuts onto legs until threads contact nylon insert in locknut. Do Not Tighten.

6.1.3 Insert 1/4" x 3/4" - 20 Thread Bolt through hole in bottom of base and through hole on long leg of bracket.





- 6.1.4 Thread locknut onto bolt and tighten. Ensure that a minimum of 1 (one) full thread is visible above the locknut. Keep bracket as square as possible in relation to base.
- 6.1.5 For alternate cable tray types, the installers site engineer shall determine the type of clamping devices to be utilized. (Alternate clamping devices shall as a minimum provide adequate support similar to those devices than utilized in the fire test.)

## 6.2 Framework Assembly and Installation

- 6.2.1 Insert spring nuts near ends of strut sections.
- 6.2.2 Attach clamps to each end of horizontal struts using bolt and lockwasher threaded into spring nut. (Written instruction for installation of alternate clamping devices shall be delineated on site specific addendums to this and/or other procedures.)

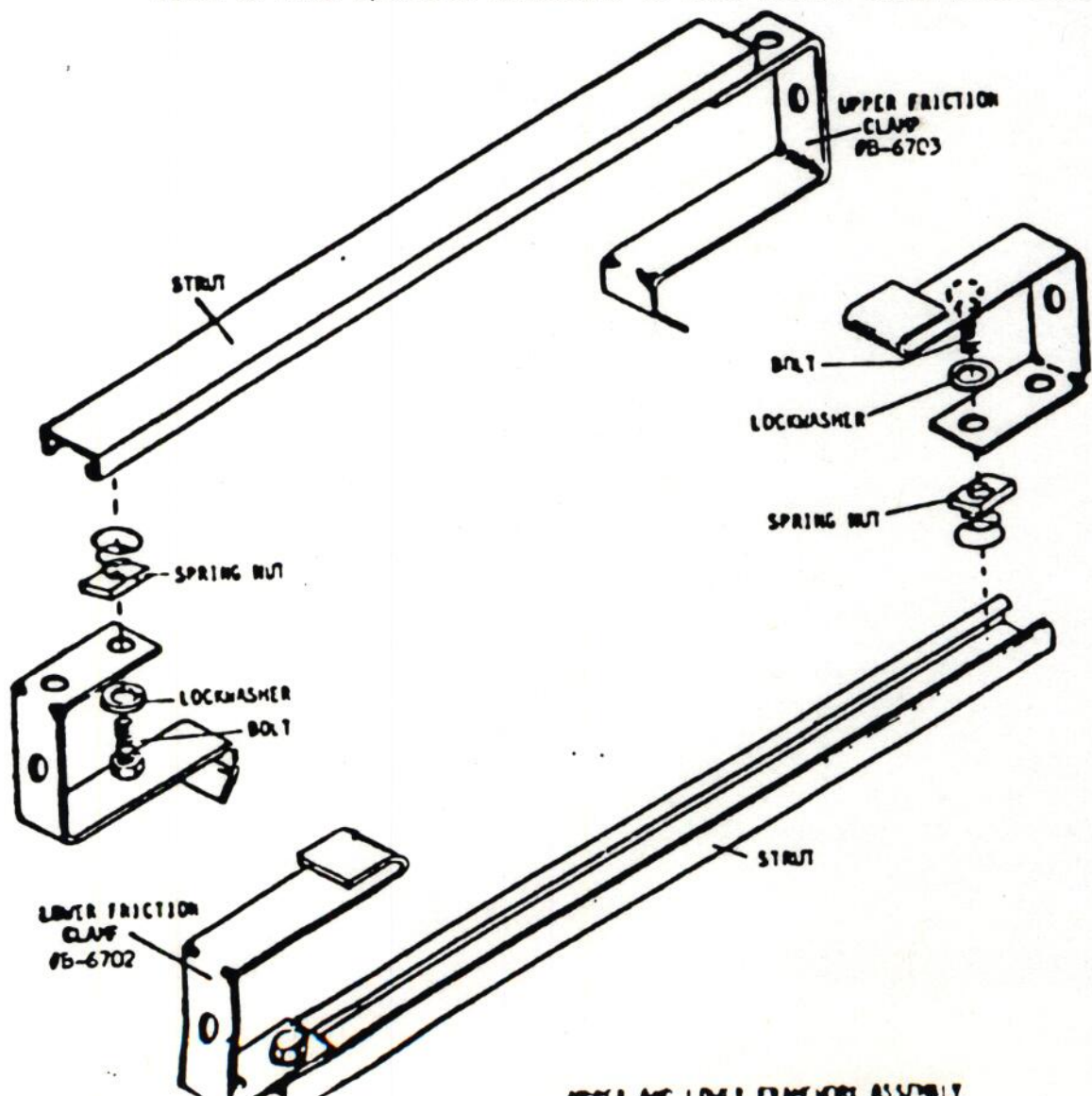


FIGURE 1: FRAMEWORK ASSEMBLY



6.2.3 Install clamp and strut assembly onto cable tray on approximate 18 inch centers. At least every seventh assembly should be locking clamps. Additional locking clamps may be installed if required by Installers Site Engineer. Clamps may be mixed as determined by the Installers Site Engineer. (See Figure 3A and Figure 3B). Do not damage cable during installation.

FRICTION CLAMP ASSEMBLY-TYPICAL

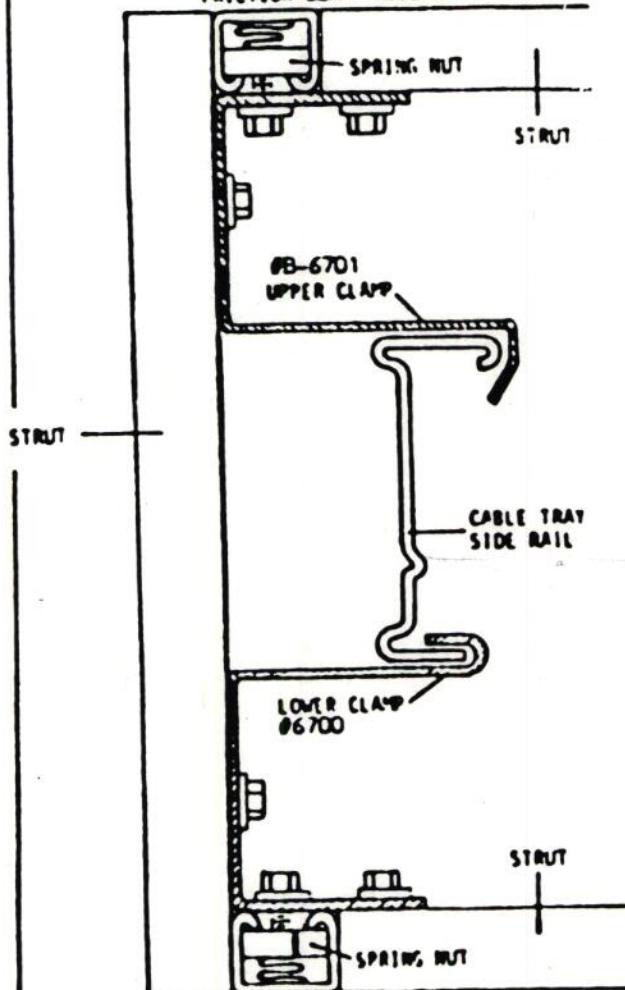


FIGURE 3A

LOCKING CLAMP ASSEMBLY-TYPICAL

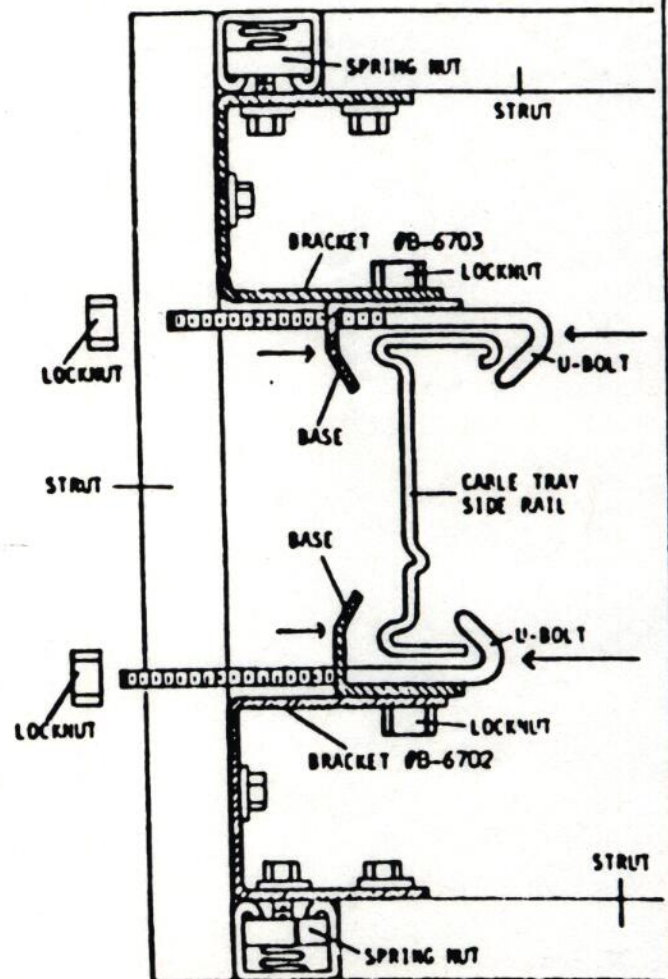


FIGURE 3B

ISSUE DESIGNATION IN THIS COLUMN INDICATE'S EMBLEM NUMBER





- 6.2.4 Attach side struts to horizontal assemblies using bolt and lockwasher threaded into spring nut. Strut may need to be moved up or down to facilitate bolt insertion. (See Figure 4).

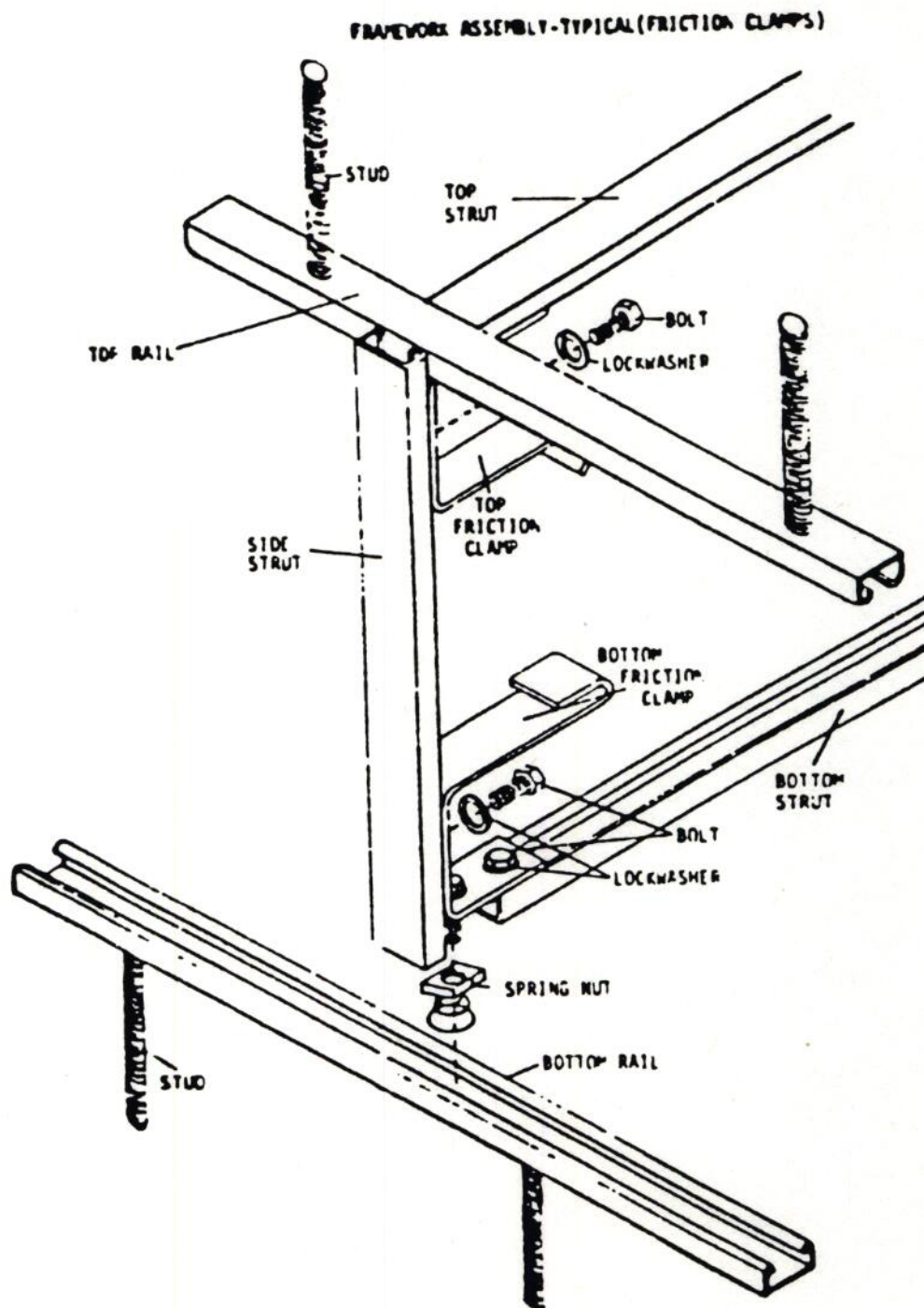


FIGURE 4

ISSUE: A  
12/4/84



**PROMATEC**

PROGRESSIVE MATERIALS AND TECHNOLOGICAL INC.

NO: JP-8400.101

PAGE: 8 of 13

ISSUE DESIGNATION IN THIS CO. INDICATES CURRENT CHANGE

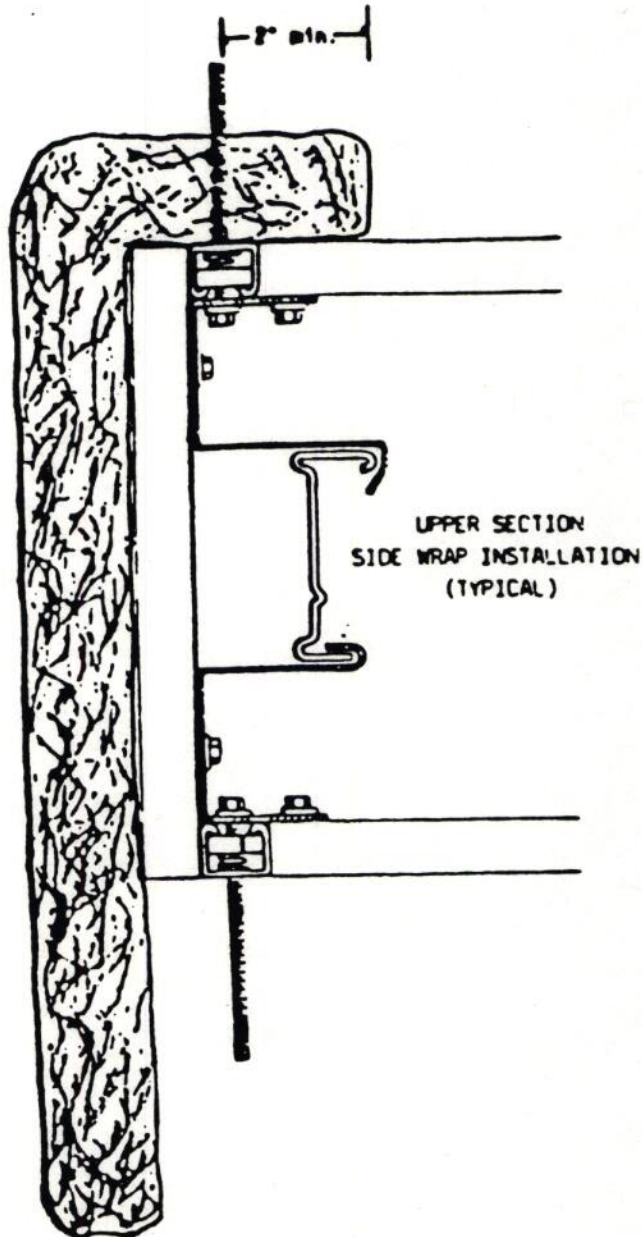


FIGURE 5





- 6.2.5 Insert spring nuts into rails on approximate 18" centers.
- 6.2.6 With the framework sections placed on approximate 18" centers  $\pm 1"$ , attach rails using bolts and lockwashers.
- 6.2.7 Check to ensure that side struts are flush ( $\pm 1/4"$ ) with the rails and firmly tighten bolts to ensure side struts to clamps.
- 6.2.8 Firmly tighten bolts to ensure rails to clamps.
- 6.2.9 Remove gaps, if any, between rails and horizontal strut by pulling on opposing side strut or rail and firmly tighten bolt to secure horizontal struts.
- 6.2.10 Firmly tighten locknuts on positive clamp U-Bolt to secure framework.
- 6.2.11 Frameworks may be shifted, if necessary, by loosening bolt to rail, moving framework as required, and re-tightening bolt.

### 6.3 Wrap Installation

- 6.3.1 Assemble materials, wraps, washers, nuts, etc. in area of cable tray to be protected.
- 6.3.2 For ease of installation either the sides or bottom wrap may be placed on the framework first. The top blanket should be the last blanket to be placed on the framework in order to have ease of access to cables.
- 6.3.3 Attach side wraps to top rails by forcing wraps onto studs (Use of pointed instrument, such as a punch, to start holes in wraps is suggested). Ensure the wrap is secured to studs. Impale wrap (inside filler material) at least 2" past the edge of the stud. (See figure 5).



- 6.3.4 Install bottom wrap onto bottom rails. This is easier if both sides are done at the same time working from one end. Use fender washers and locknuts to hold the wrap onto the studs temporarily. Do not tighten the locknuts or damage the plastic insert. (See Figure 6). If locknut is damaged, replace with a new one.

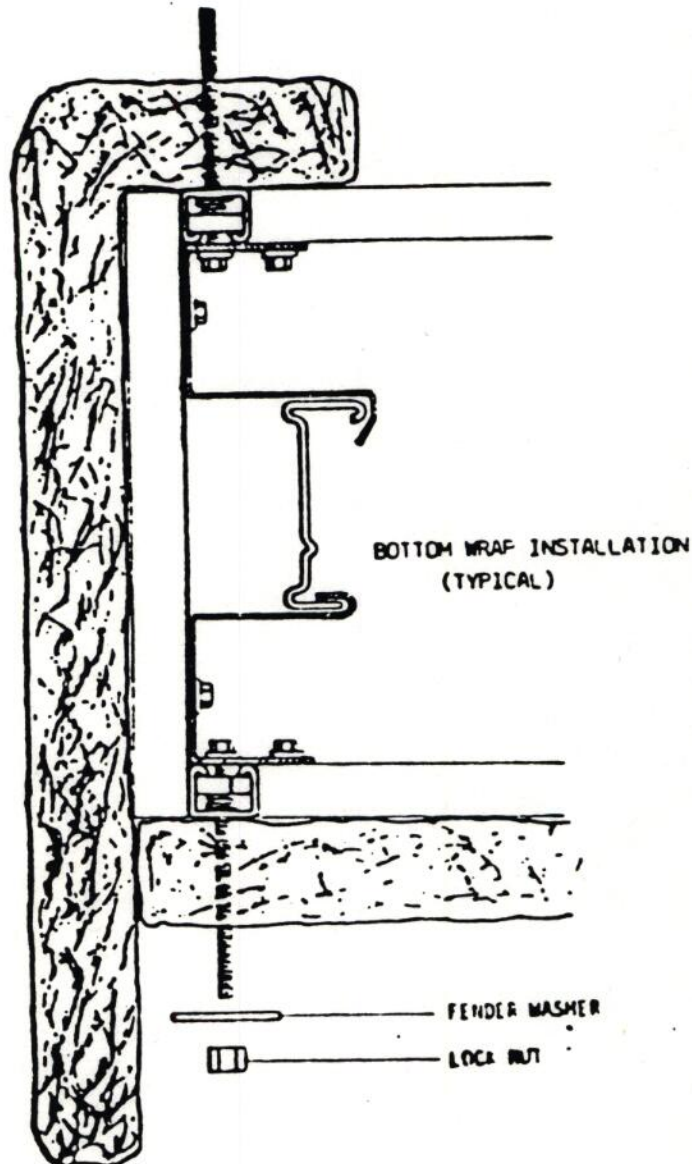


FIGURE 6





- 6.3.5 Attach lower end of side wraps to bottom rail. This is best accomplished by removing, one at a time, a fender washer and locknut supporting the bottom wrap, forcing the side wrap onto the stud and re-installing the fender washer and locknut. Make sure that the side wrap extends a minimum of 2" past the studs. (See Figure 7)

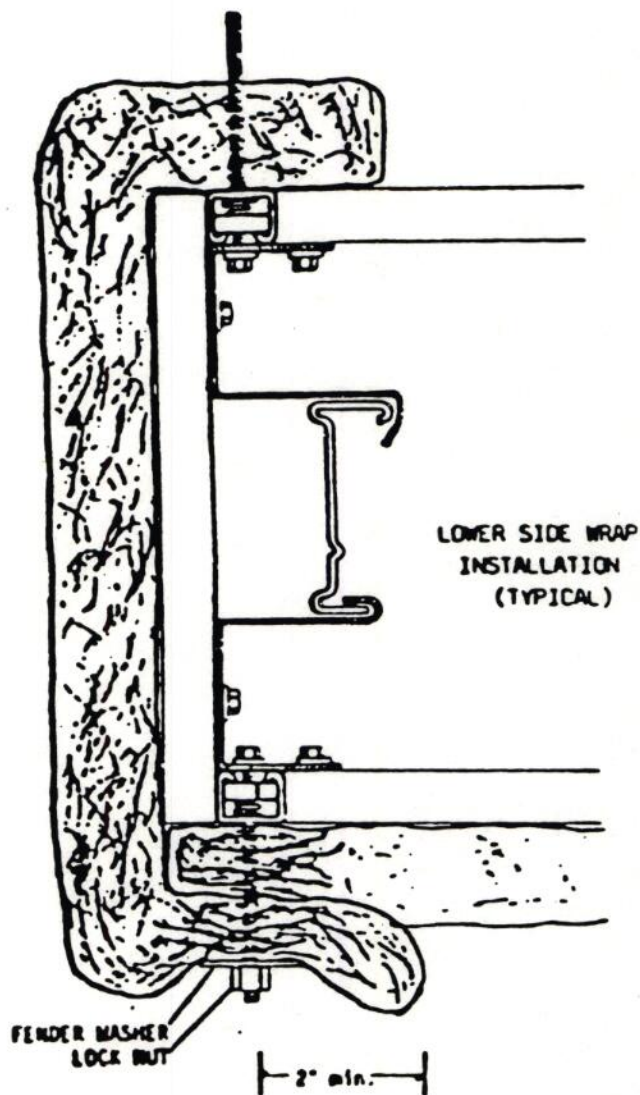


FIGURE 7



- 6.3.6 Place top wrap on top frameworks approximately centered. Push wrap onto studs and install fender washer and locknuts (See Figure 8).

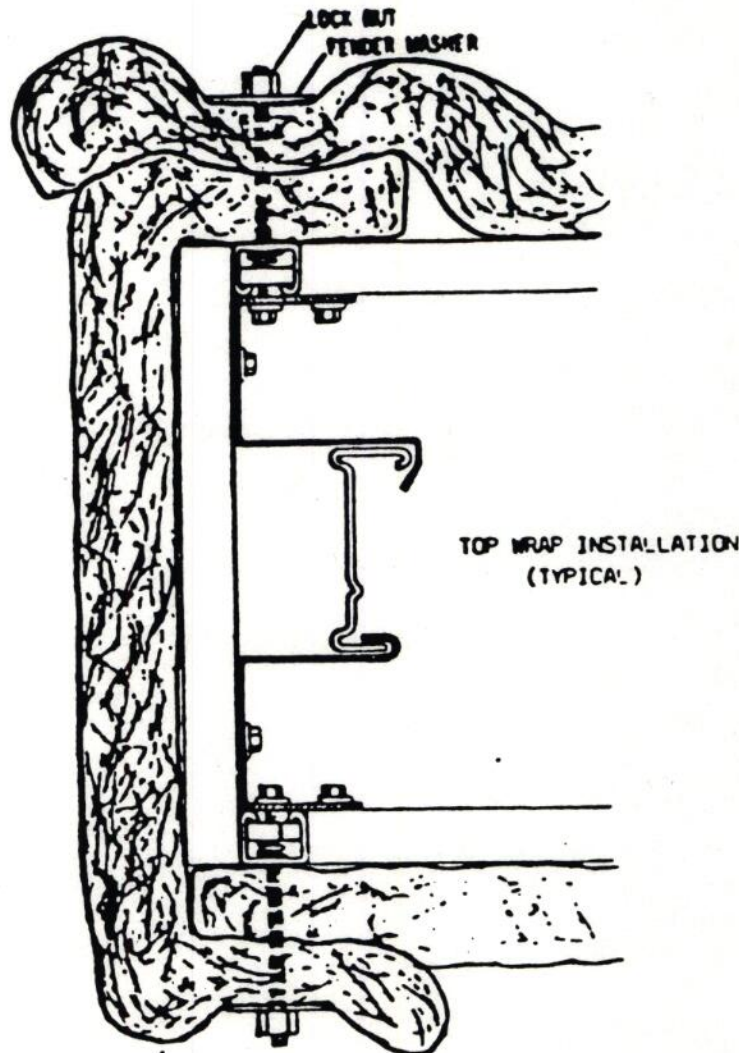


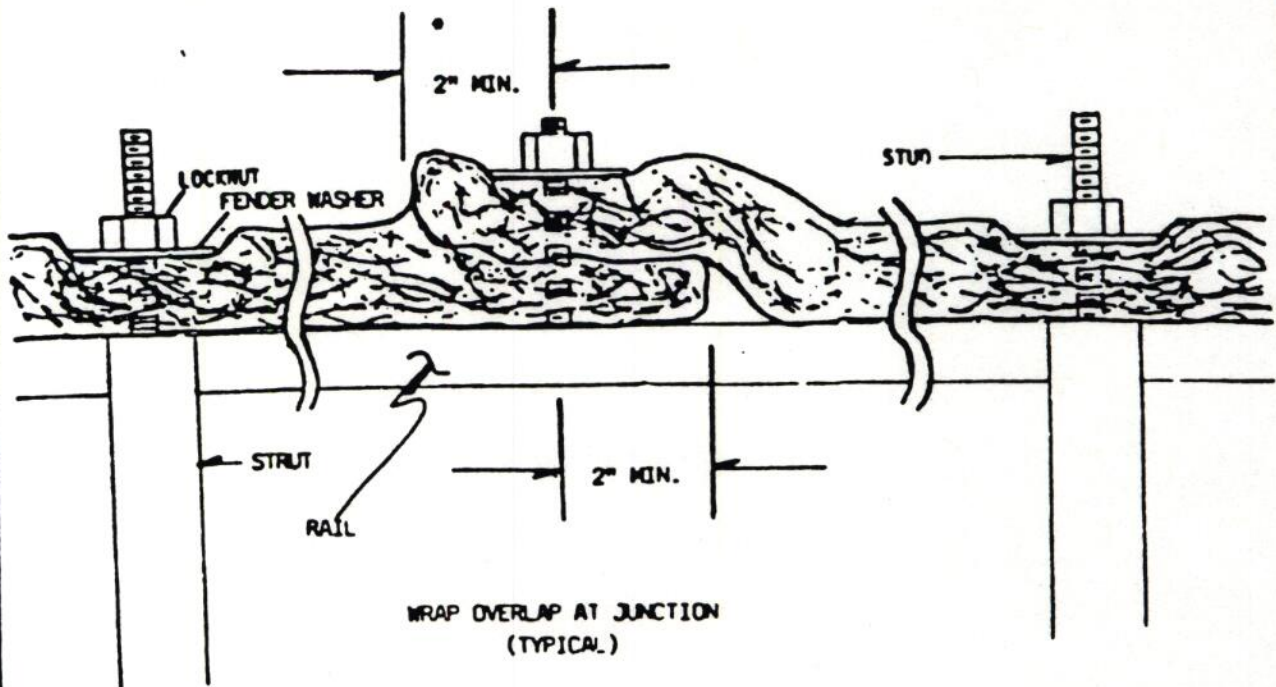
FIGURE 8

- 6.3.7 Tighten locknuts onto studs until the wraps are compressed 1/4" - 1/2".





- 6.3.8 At wrap system continuation joints, the continuing wrap system must overlap 4" - 6" onto the other system. (See Figure 9). Additional studs may be required as determined by Installers Site Engineer.



- SEE PARA 6.3.9 WHEN EXTERIOR BLANKET DOES NOT EXTEND BEYOND THE STUDS THE REQUIRED 2" MINIMUM.

FIGURE 9

- 6.3.9 In those situations where the exterior blanket at any joint does not extend beyond the studs the recommended 2" minimum, an overlap of less than 2" used in conjunction with a continual quartz thread stitching along the joint is an acceptable alternate.
- 6.3.10 Stagger wrap system continuation joints so that only opposite sides stop at any one stud (2 side wraps or top and bottom wrap). No more than three thicknesses of wrap should be on any one stud.

<b>PROCEDURE FOR:</b> INSTALLATION OF INSULCO/HEMYC PROTECTIVE WRAP SYSTEM - CURVED SECTIONS OF CABLE TRAY	<b>PROCEDURE NUMBER:</b> <u>8400.102</u>
--	---

## PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 11/15/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Issued for Review and Comment
B ISSUE 11/29/82	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add Insulco Foreword; Revise 1.0 to define testing; Add ANI reference to 3.2; Revise 3.4; Add "clamp" to 4.0; Revise 5.1, 5.2, 5.3, 5.4, 6.1, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5; Add 6.2.7; Revise 6.3.1, and 6.3.2. Section 2.0 revised also.
C ISSUE 03/01/83	<i>K.W. Spriggs</i> K.W. Spriggs	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Title change; Foreword revised; Revise 1.0, 2.0, 3.4, 4.0 as noted; 6.1, 6.2.4, 6.2.5; Figure 1 (notes in drawing); Figure 2 (notes in Detail 1 & 2); Figure 5 (notes in Detail 1); 6.4
D ISSUE 03/30/83	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add 3.5, 3.6, 3.7, and 3.8; Revise 6.2.3

9308270279 930813  
 PDR ORG NRRB  
 PDR

Form 11.2  
 06/01/82



ISSUE:  
D ISSUE  
03 30 83

## B & B INSULATION, INC.

NO: 8400.102

PAGE: 2 of 7

### INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM CURVED SECTIONS OF CABLE TRAY

#### 1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO HEMYC Protective Wrap System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B CIP-1026, consisted of a One (1) Hour Fire Exposure, per AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR IE ELECTRICAL CIRCUITS".

#### 2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of the INSULCO/HEMYC Protective Wrap System.

#### 3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin No. 5(79)
- 3.3 HEMYC Test, CIP-1026
- 3.4 B&B Installation Procedure No. 8400.101  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -  
STRAIGHT SECTIONS OF CABLE TRAY
- 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR  
INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS
- 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP  
COMPONENTS
- 3.7 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC  
PROTECTIVE WRAP COMPONENTS
- 3.8 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS  
B&B Drgs B-310, B-311, B-312 and B-313.

#### 4.0 DEFINITIONS

FLAT BRACKET - galvanized plate used to connect strut sections.

L-BRACKET - galvanized "L" shaped connection used to support and connect strut in areas where clamp is not needed or cannot be used.

INDICATES ELEMENTS

ISSUE DESIGNATION IN THIS CO

## 5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.

- 5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.

- 5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QA Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

## 6.0 PROCEDURE

- 6.1 For basic framework installation refer to B&B Procedure No. 8400.101 INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM - STRAIGHT SECTIONS OF CABLE TRAY.

### 6.2 Horizontal Curves

- 6.2.1 A prototype framework may be developed for each cable tray size and type. These will be used to establish the dimensions for fabrication of rails as required.

- 6.2.2 Rail shall be assembled, using flat brackets, spring nuts, bolts and lockwashers, as shown in figure 1, to allow for curvature of rails.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



INDICATES CURRENT CHANGE

ISSUE DESIGNATION IN THIS

6.2.3 Curved sections may require additional supports as shown in Figure 2. Supports are attached as illustrated in Details 1 and 2 of Figure 2. Further support requirements, if any, will be determined by the Installer's Site Engineer.

6.2.4 Rails shall extend onto adjoining straight cable tray section and be securely attached using locking clamps. (Reference Figure 2 and Figure 5).

6.2.5 Studs that cannot be pre-attached to curved rail sections, must be attached as shown in Figures 3 and 4. Length of stud shall be as determined by Installer's Site Engineer.

6.2.6 Flat brackets must be used to connect adjoining rail sections and curved rails to straight rails at intersections. Reference Figure 5, Detail #1.

6.2.7 Additional supports or studs may be necessary as determined by the Installer's Site Engineer.

#### 6.3 Vertical Curves

6.3.1 Vertical curves, up or down, do not require cutting or welding. The rails are bent on a roller to a radius to be determined by Installer's Site Engineer.

6.3.2 Additional supports or studs may be necessary as determined by the Installer's Site Engineer.

6.3.3 Clamp installation and attachment are the same as for horizontal curves. (Reference Figure 5).

#### 6.4 Wrap Installation

6.4.1 Refer to Section 6.3 of B&B Procedure No. 8400.101 for Wrap Installation Procedure.

#### 7.0 ATTACHMENTS

None

ISSUE:  
D ISSUE  
03/30/83

B & B INSULATION, INC.

NC: 8400.102

PAGE: 5 of 7

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

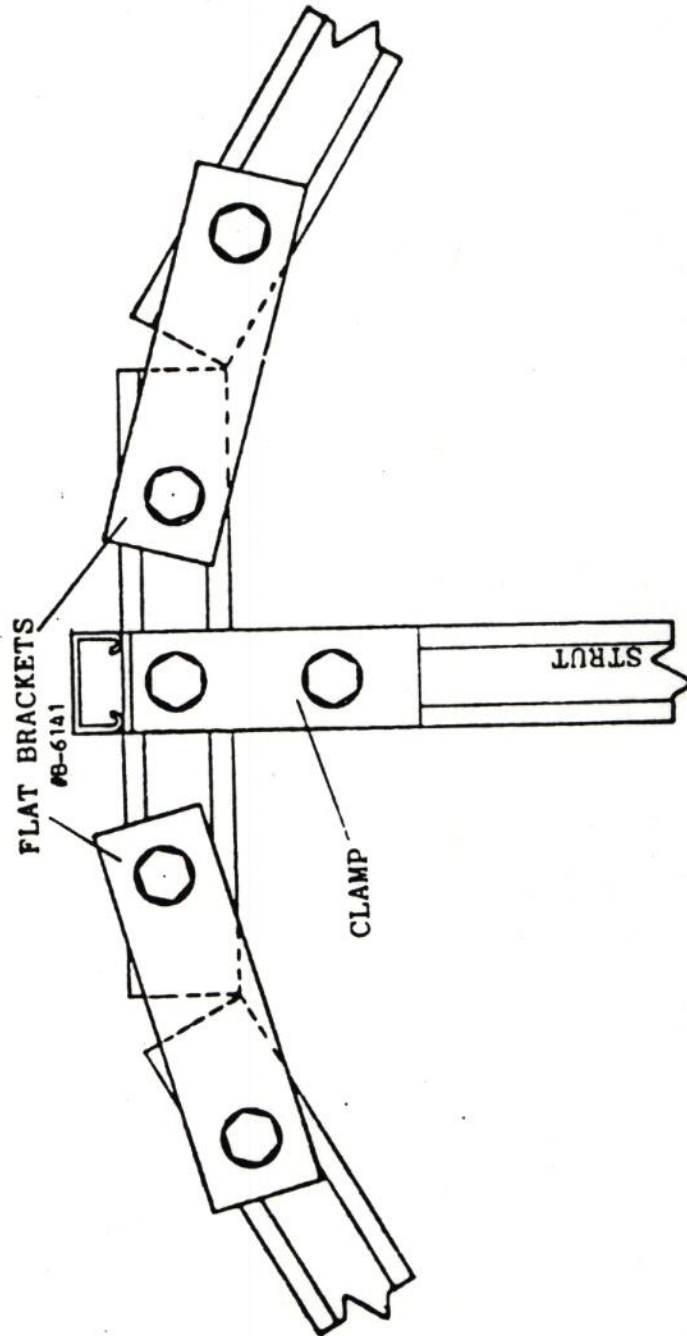


FIGURE 1



ISSUE:  
D ISSUE  
03 30 83

B & B INSULATION, INC.

NO: 8400.102

PAGE: 6 of 7

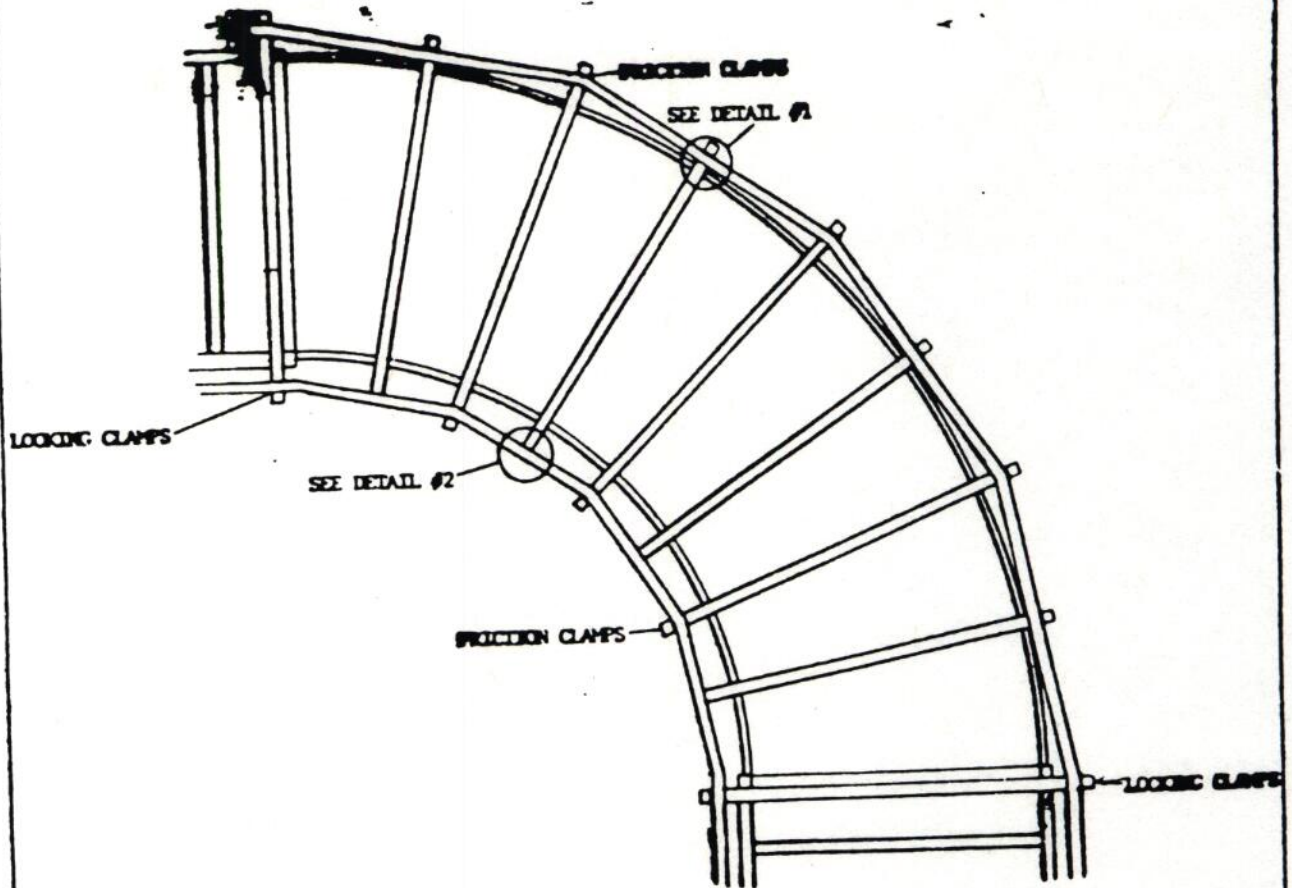
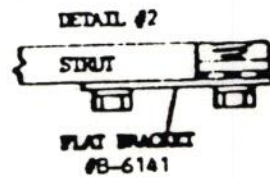
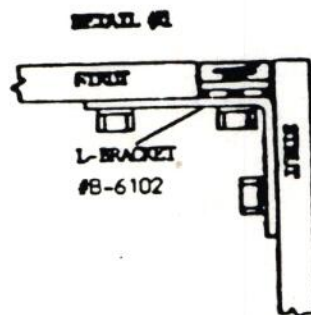


FIGURE 2



ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

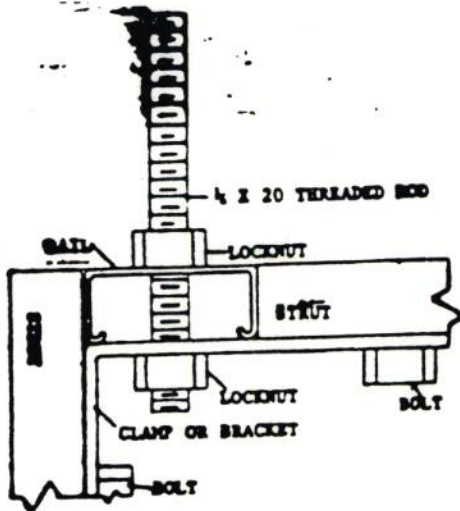


FIGURE 3

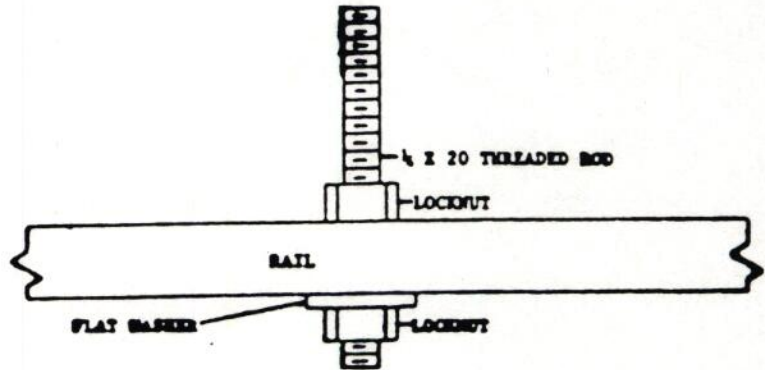


FIGURE 4

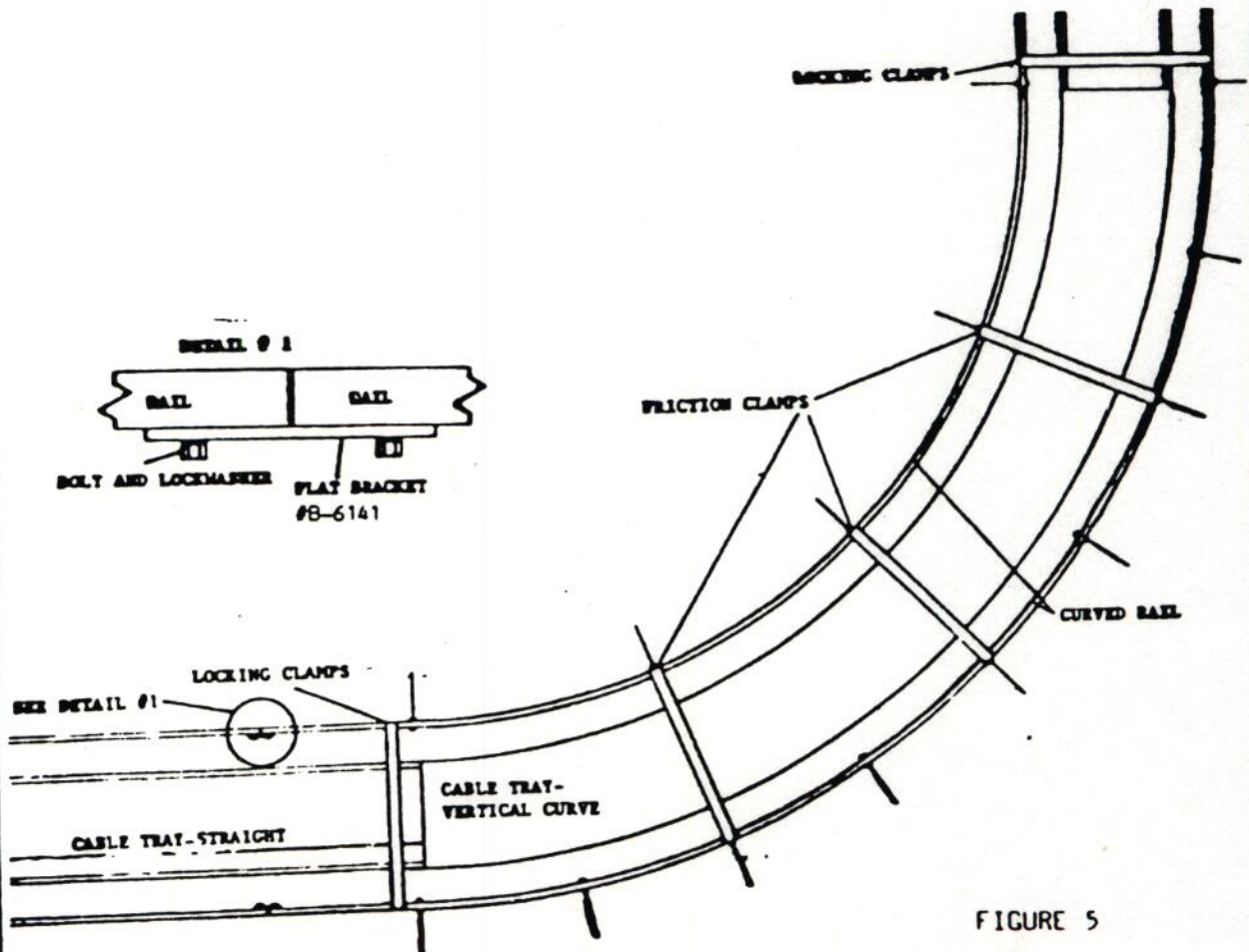
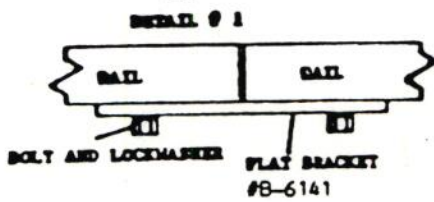


FIGURE 5

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE





# PROMATEC

PROGRESSIVE MATERIALS AND TECHNOLOGIES, INC.

PROCEDURE FOR:

FABRICATION OF INSULCO/HEMYC CABLE  
PROTECTION SYSTEM COMPONENTS

PROCEDURE NUMBER:

IP-8400.105

## PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A Issue 03/07/85	<i>Durrell L. Failor</i> D. L. Failor	<i>K.R. Harris</i> K. R. Harris <i>L.C. Strigg</i> L.C. Strigg	This procedure supercedes B&B IP-8400.105 C Issue in its entirety.

9308270288  
9308270288 930813  
PDR ORG NRRB  
PDR



## FABRICATION OF INSULCO/HEMYC PROTECTIVE WRAP SYSTEM COMPONENTS

### 1.0 PURPOSE

The purpose of this Procedure is to assure that the fabrication of the INSULCO/HEMYC Cable Protection System Components is consistent with the system components as tested in the various qualification tests. The Fire Qualification Test, referenced as B&B CTP-1026, consisted of a One (1) hour Fire Exposure, per ASTM E-119 criteria, including hose stream in accordance with the American Nuclear Insurers Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS CIRCUITS".

### 2.0 SCOPE

This Procedure provides the methods and guidelines for the fabrication of both cable tray and conduit protection system components. The fabrication activities are to be performed by an outside source with Quality verification by (PROMATEC) Quality Personnel.

### 3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin No. 5(79)
- 3.3 INSULCO/HEMYC Fire Qualification Test - B&B CTP-1026
- 3.4 ANI Acceptance dated 08/02/82
- 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.
- 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.
- 3.7 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS  
B&B DRGS. B-310, B-311, B-312 and B-313.

### 4.0 DEFINITIONS

NONE

### 5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and to provide the applicable drawings, specifications, requirements, instructions, etc., to the department responsible for fabrication and installation.





This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure a smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.

This PRODUCTION DEPARTMENT shall also be responsible for the initiation of appropriate Fabrication Orders, verify their authenticity, initiate appropriate procurement documents and provide these documents to the fabrication facility.

- 5.3 The PROMATEC QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable PROMATEC Quality Control Procedures.

## 6.0 PROCEDURE

- 6.1 Only Approved materials as listed below shall be utilized in the fabrication of INSULCO/HEMYC Cable Protection System Components.

### Acceptable Materials

#### 6.1.1 External Fabric

- a. SILTEMP 84CH/SR Water Repellant, Thermal Barrier Cloth, 0.030 nom. thickness, 18oz/yd(2)
- b. Or Approved equal

#### 6.1.2 Internal Fabric

- a. Klever 600/6 or J.P. Stevens #332 Fiberglass Cloth, 49" width, 13 oz/yd(2)
- b. Or Approved equal

(Internal Fabric may be used on the non-fire side of protection blanket as necessary. If used, External Fabric must overlap a minimum of 6" onto non-fire side.)

#### 6.1.3 Internal Filler

- a. Johns-Manville Cerablanket  
6 or 8 lb density  
0.5, 1.5 and/or 2.0 inch thickness

OR

- b. Babcock & Wilcox KOAWOOL Ceramic Fiber Blanket  
6 or 8 lb density



0.5, 1.5 and/or 2.0 inch thickness

OR

c. Approved equal

#### 6.1.4 Thread

a. Astroquartz sewing thread Type Q-24 Teflon coated approximately .020" diameter  
Breaking Strength -- 20 lbs

OR

b. Alphaquartz sewing thread Type Q-24 Teflon coated approximately .020 diameter  
Breaking Strength -- 20 lbs

OR

c. Approved Equal

#### 6.2 Fabrication Order (Form QC-59)

6.2.1 The completed Fabrication Order (B&B Form QC-59) shall be provided to the fabrication facility.

6.2.2 This form shall define information as listed below:

- a. Fabrication Order
- b. Blanket Number
- c. Project Number
- d. Project Name
- e. Location -- building, room, elevation
- f. Drawing Reference
- g. Blanket Length
- h. Width
- i. Thickness \_\_\_\_ 0.5", \_\_\_\_ 1.5", \_\_\_\_ 2"
- j. Tray Identification
- k. Conduit Identification
- l. Other -- General comments, description, etc.





- m. Sketch -- Brief sketch as required
- n. Client Acceptance
- o. Certification
- p. Ordered by and Date
- q. INSULCO QA/QC Acceptance and Date

If any information is not required, N/A shall be inserted in the applicable area.

### 6.3 Manufacture of Protective Wrap Components

#### 6.3.1 Initial Envelope Assembly (Figure 1)

6.3.1.1 Cut external and internal (if required) fabrics to proper dimensions - as defined by fabricator to assure proper finished dimensions as specified on the applicable fabrication order. As applicable, fabricator shall measure from the "finished" edge of fabrics not the "factory" edge.

6.3.1.2 Double stitch external and internal fabrics together as shown in Figure 1. If only external fabric is used double stitch fabric together as shown in Figure 1A.

6.3.1.3 Double stitch one end of blanket as shown in Figure 2/2B, if applicable. Fabricator may elect to insert blanket prior to closure of either end. In this case, refer to Item 6.3.3.2 for instructions.

During fabrication of wraps it may be necessary to use staples, pins or clips to hold fabrics together while sewing. These may remain within the system but shall not damage or be detrimental to the wrap.

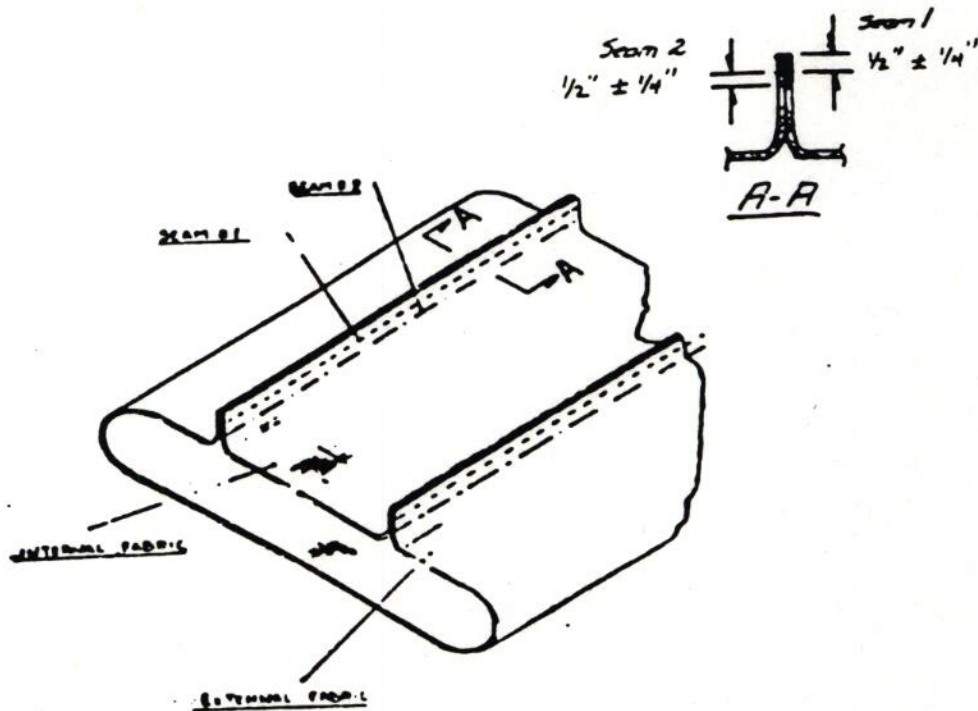


FIGURE 1

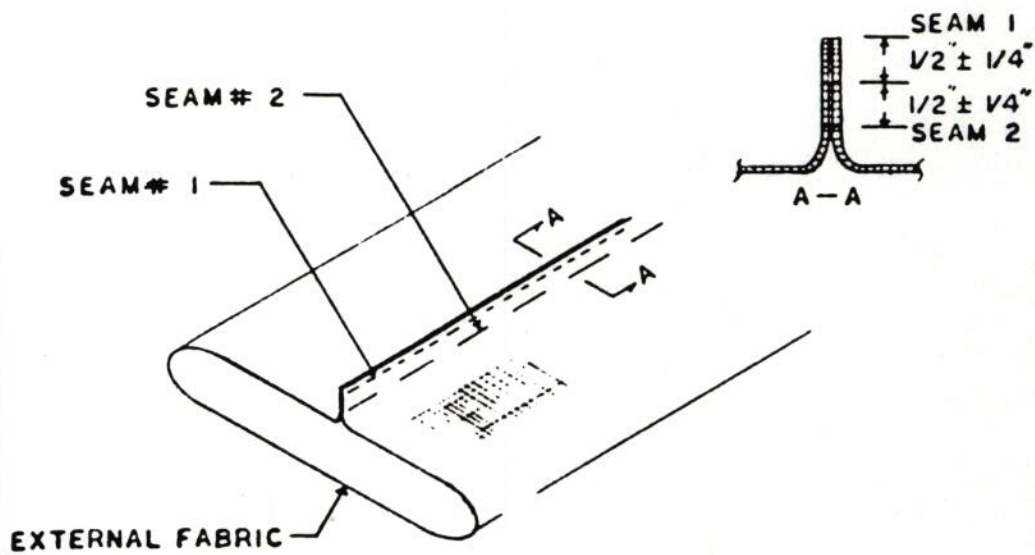


FIGURE 1A





- 6.3.1.4 Turn envelope assembly inside out to hide exposed rough edges of fabric and provide a "finished" seam appearance.

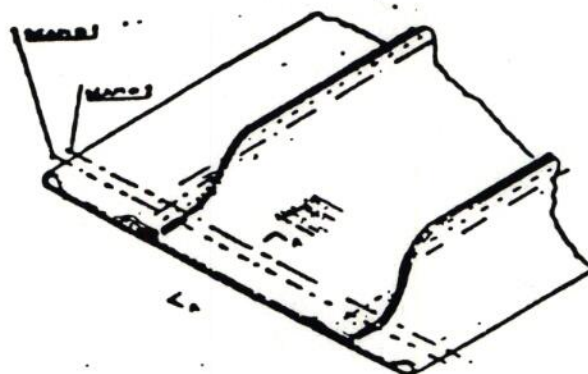


FIGURE 2

QT.

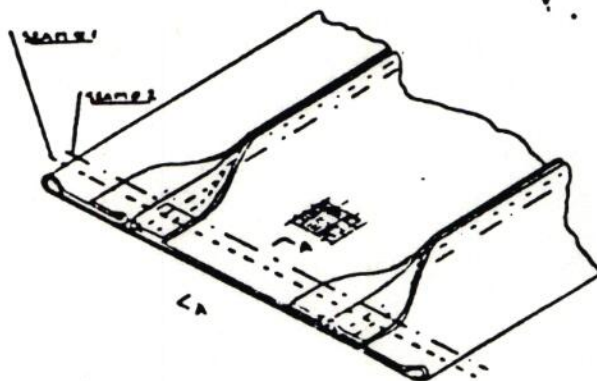


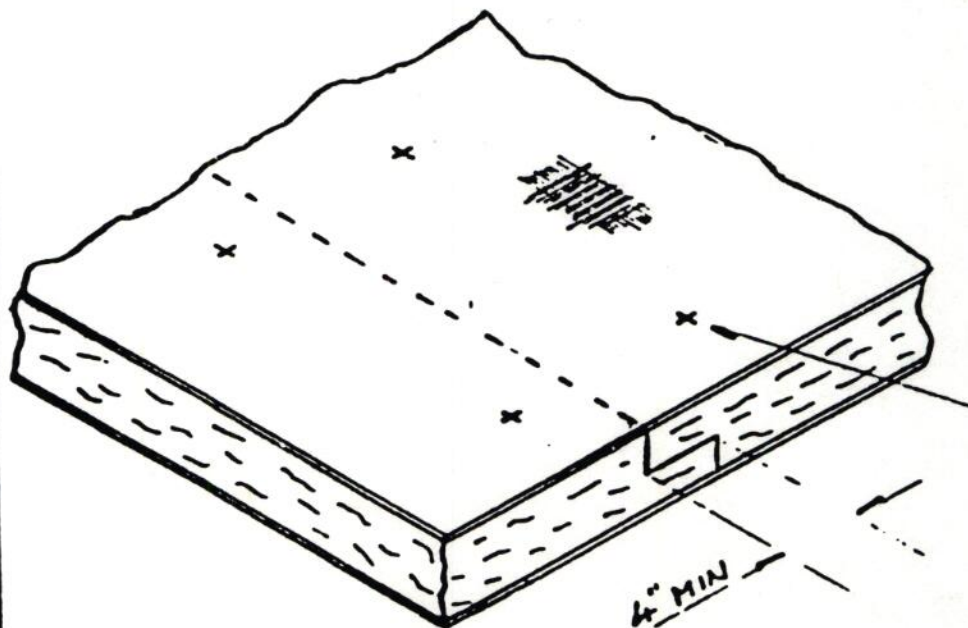
FIGURE 2B



### 6.3.2 Insertion of Filler Material

6.3.2.1 Cut filler material to proper size (as defined by fabricator to assure proper finished dimension) 0.5" thick - HEMYC Wrap; 1.5" thick - Cable Tray; 2" thick - Conduit.

6.3.2.2 Multiple pieces of filler material may be required to fabricate wraps. To prevent joint gaps in filler material, trim pieces as shown in Figure 3 and secure "darts" spaced on maximum 9" centers for 2" blankets or 4" hand sewn seam (See Figure 4) for 0.5" and 1.5" blankets. Darts or seam shall be placed parallel to overlap pieces and minimum six (6) inches = 1" from center line of overlap.



DARTS OR  
SEAM

6.3.2.3 Insert filler material inside envelope assembly assuring that filler material is kept flat and occupies the entire interior of the envelope and is relatively tight.

6.3.2.4 If filler material has a tendency to "bunch up" during installation, the fabricator shall smooth by hand or other means to assure total fill. Method used shall not cause damage or be detrimental to the wrap system.

NOTE: If filler material appears to be too large





creating "punkers" at stitches, remove filler material and trim as necessary.

### 6.3.3 Completion of Envelope Assembly

6.3.3.1 Roll under fabric at open end and double stitch as shown in Figure 4A.

6.3.3.2 If both ends were left open until insertion of filler material, both ends shall now be closed as shown in Figure 4A.

### 6.3.4 Longitudinal Stitching

6.3.4.1 Longitudinal stitching shall be performed as shown in Figure 4. When multiple widths of filler material are required (Item 6.3.2.2) a minimum of two row of longitudinal stitches must be in each multiple width.

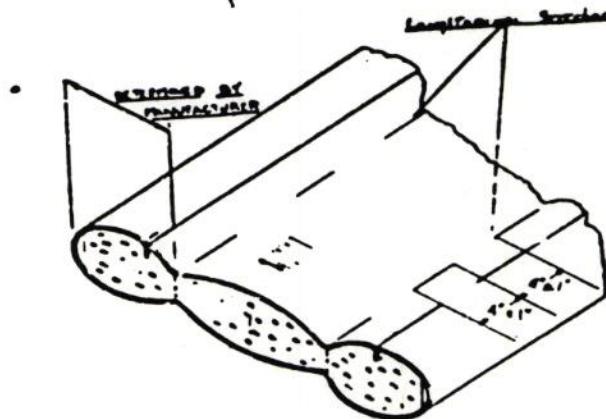


FIGURE 4  
Typical Section Through Blanket

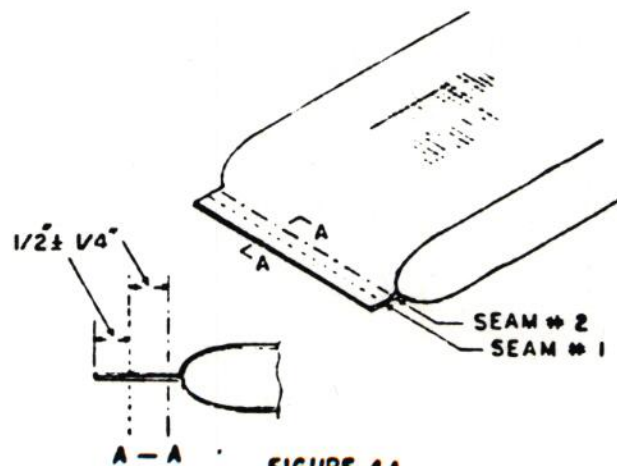


FIGURE 4A



- 6.3.4.2 The specific placement of the longitudinal stitches is at the discretion of the fabricator.
- 6.3.4.3 When fabricating 2" thick conduit wrap, "darts" or similar may be used instead of longitudinal seams to secure the filler material in position. Refer to Figure 5.

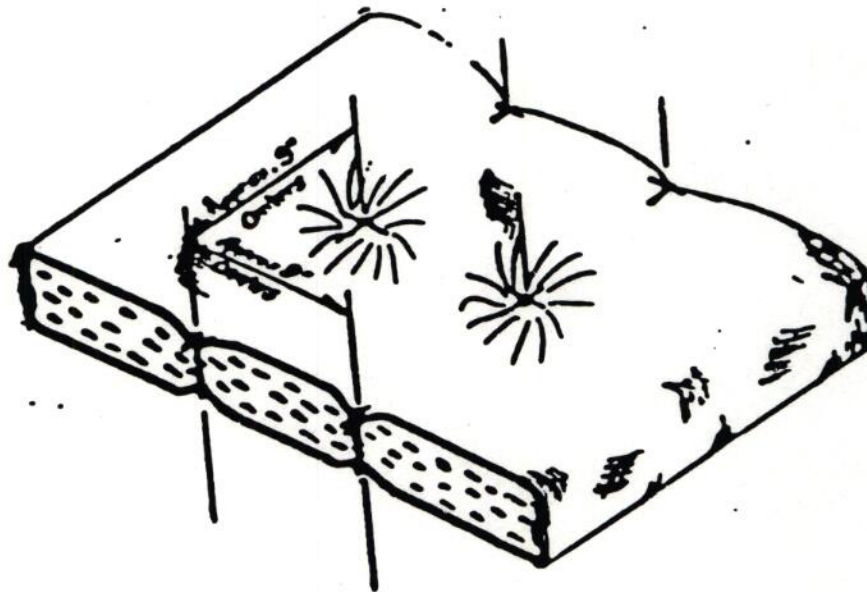


FIGURE 5

#### 6.4 Fabricator Inspector

- 6.4.1 The fabricator shall assure that the completed wrap assembly conforms to the requirements specified on the applicable fabrication order.
- 6.4.2 This inspection by fabrication shall be in addition to verification by QC as defined in QCP-10002.

#### 6.5 Identification Markings





6.5.1 Identification markings shall be placed on each wrap assembly at a minimum of two locations.

- a. In close proximity to one of the lengthwise edges on the exposed surface.
- b. In close proximity to one of the ends on the exposed surface.
- c. Various project requirements may specify that this marking is also provided on the interior (non-fire) surface.

6.5.2 These markings shall be the blanket number as defined on the applicable fabrication order.

6.5.3 Markings shall be of a waterproof paint or ink which will retain the marking, withstand weathering deterioration, and other handling effects and shall not be deleterious to the fabric.

6.5.4 These markings shall be in characters no less than 3/4 inch (19 mm) high.

## 7.0 ATTACHMENTS

NONE

<b>PROCEDURE FOR:</b> INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION BOXES AND SIMILAR EQUIPMENT	<b>PROCEDURE NUMBER:</b> <u>8400.108</u>
--	---

## PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A ISSUE 03/14/83	R.L. Meadows R.L. Meadows <i>per D. Smith</i>	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Issue for Construction
B ISSUE 03/30/83	R.L. Meadows R.L. Meadows <i>per C. Walker</i>	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add additional reference

9308270300 930813  
 PDR ORG NRRB  
 PDR

Form QC 5  
 06/01/82

supercedes previous  
 QC 5, QC 5a & QC 6

P O BOX 2531 • HOUSTON, TEXAS 77001 • (713) 688-8971



ISSUE:  
B ISSUE  
03/30/83

## B & B INSULATION, INC.

NO: 8400.10:

PAGE: 2 of 6

### INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION BOXES AND SIMILAR EQUIPMENT

#### 1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with the system as tested in the various qualification tests. The Fire Qualification Test, referenced as B&B CIP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin No. 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS 1E ELECTRICAL CIRCUITS".

#### 2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of Protective Wrap Components to electrical junction boxes and similar equipment.

#### 3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin No. 5(79)
- 3.3 HEMYC Test CIP-1026
- 3.4 B&B Installation Procedure No. 101  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -  
STRAIGHT SECTIONS
- B 3.5 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING, AND STORAGE  
FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS.
- B 3.6 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP  
COMPONENTS
- B 3.7 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE  
WRAP COMPONENTS
- B 3.8 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS  
b7b Drgs. B-310, B-311, B-312, and B-313.

#### 4.0 DEFINITIONS

None

#### 5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instruction, etc., to the department responsible for installation.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

This department shall also be responsible to provide liason with applicable client personnel and other internal departments to assure smooth flow of communication.

- 5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by ENGINEERING.
- 5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.
- 5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation, and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.

The Quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC., or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO, QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

## 6.0 PROCEDURE

### 6.1 Layout of Wrap

- 6.1.1 The installer's Site Engineer shall take exterior measurements of the junction boxes to be protected and develop a pattern similar to the pattern shown in Figure 1. An alternate method would be to develop pieces that could be field sewn as shown in Figure 2.

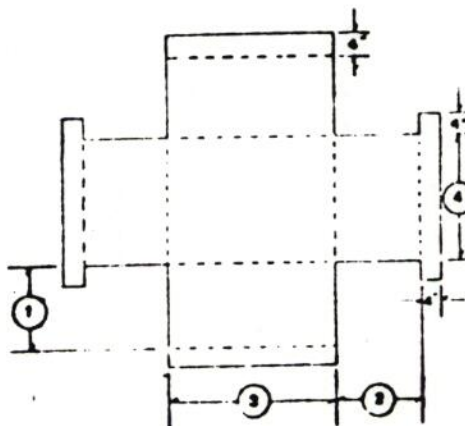


FIGURE 1



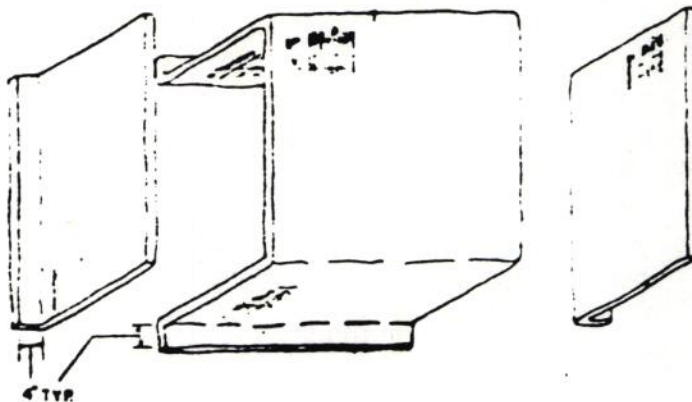


FIGURE 2

- 6.1.2 Dimensions #1, 2 and 3 on Figure 1 should be increased 4" from junction box dimensions to allow for wrap thickness.
- 6.1.3 Note on Figures 1 and 2 that approximately 4" is allowed at ends to overlap onto surface for attachment.
- 6.1.4 The Installer's Site Engineer should ensure that sufficient material allowances are made on all patterns to provide for overlap at corners of junction box.

## 6.2 Installation

- 6.2.1 Wrap system may be installed as shown in Figure 3 for floor, wall, or ceiling mounting or as shown in Figure 4 in the case of free standing equipment.

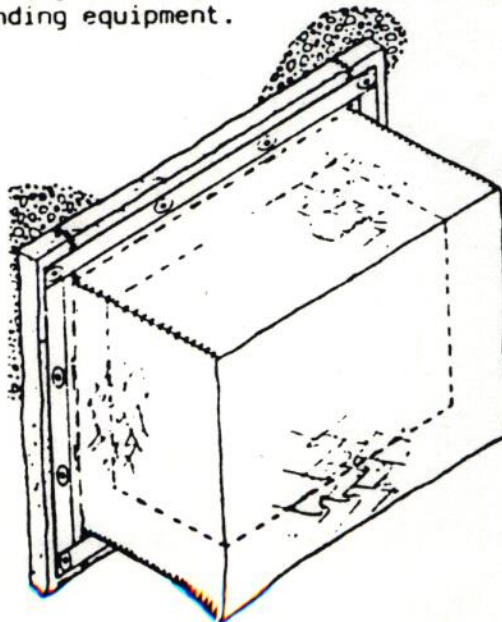


FIGURE 3

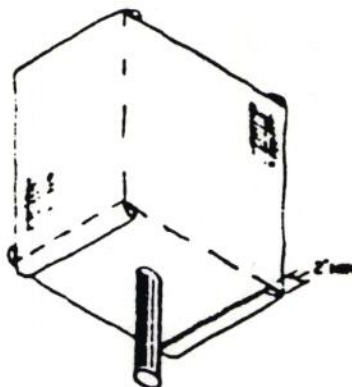


FIGURE 4

- 6.2.2 For equipment that will require frequent access, a framework may be used as shown in Figure 5 to provide ease of system removal.

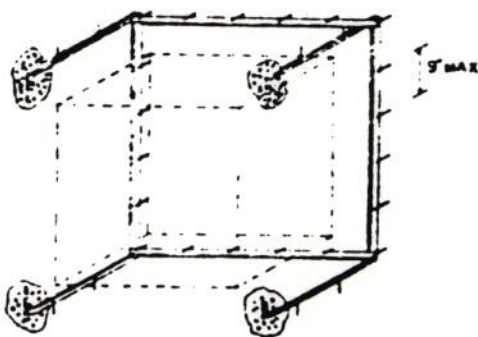


FIGURE 5

- 6.2.3 Concrete anchors used for floor, wall or ceiling installation shall be placed as determined by Installer's Site Engineer.
- 6.2.4 Mounting of wrap to floor, wall or ceiling shall be done similar to that described in B&B Procedure 8400.104
- 6.2.5 All sewing shall be done in accordance with the requirements of B&B Procedure 8400.104.



6.2.6 Ensure that no gaps exist in wrap system. Minimum thickness of wrap at all points is 2". Fill as necessary with ceramic blanket to maintain minimum thickness.

7.0 ATTACHMENTS

None



## PROCEDURE FOR:

THE PREFABRICATION AND INSTALLATION APPROVAL  
OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM

PROCEDURE NUMBER:

8400.109PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 03/15/83	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K. R. Harris <i>L.C. Spriggs</i> L. C. Spriggs	Issue for Review & Comment
B ISSUE 03/30/83	<i>R.L. Meadows</i> R.L. Meadows	<i>K.R. Harris</i> K.R. Harris <i>L.C. Spriggs</i> L.C. Spriggs	Add 3.9, 3.10, and 3.11; Rev. 6.0

9308270302 930813  
PDR ORG NRRB  
PDRFORM 11.2  
06/01/82



PROCEDURE FOR THE PRE-FABRICATION AND  
INSTALLATION APPROVAL OF THE INSULCO/HEMYC  
PROTECTIVE WRAP SYSTEM

1.0 PURPOSE

The purpose of this Procedure is to provide a method for the client acceptance of proposed Wrap installation prior to fabrication. This Procedure will also provide a tracking system by which traceability of wraps is provided after installation.

2.0 SCOPE

This Procedure will outline the methods to be used for the Pre-fabrication approval of proposed wrap installation throughout the project and provide the tracking of materials through "as built's".

3.0 REFERENCES

- 3.1 B&B Installation Procedure No. 8400.101  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -  
STRAIGHT SECTIONS OF CABLE TRAY
- 3.2 B&B Installation Procedure No. 8400.102  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM -  
CURVED SECTIONS OF CABLE TRAY
- 3.3 B&B Installation Procedure No. 8400.103  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM ONTO  
SINGLE OR MULTIPLE CONDUITS
- 3.4 B&B Installation Procedure No. 8400.104  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM  
AROUND INTERFERENCES AND OBSTRUCTIONS
- 3.5 B&B Installation Procedure No. 8400.105  
MANUFACTURE OF INSULCO/HEMYC CABLE PROTECTION SYSTEM COMPONENTS
- 3.6 B&B Installation Procedure No. 8400.106  
INSTALLATION OF FIRESTOPS AND TERMINATIONS WITHIN THE INSULCO/HEMYC  
PROTECTIVE WRAP SYSTEM FOR CABLE TRAY(S) AND CONDUIT
- 3.7 B&B Installation Procedure No. 8400.107  
INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM  
MULTIPLE CABLE TRAYS
- 3.8 B&B Installation Procedure No. 8400.108  
INSTALLATION OF THE INSULCO/HEMYC PROTECTIVE WRAP SYSTEM TO JUNCTION  
BOXES AND SIMILIAR EQUIPMENT

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

8 ✓ 3.9 QCP-10001, PACKAGING, SHIPPING, RECEIVING, HANDLING AND STORAGE FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

8 3.10 QCP-10002, FABRICATION INSPECTION FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

8 ✓ 3.11 QCP-10003, INSTALLATION INSPECTION CRITERIA FOR INSULCO/HEMYC PROTECTIVE WRAP COMPONENTS

3.12 INSULCO/HEMYC PROTECTIVE CABLE WRAP SYSTEM TYPICALS  
B&B Drgs B-310, B-311, B-312, and B-313

3.13 10CFR50, Appendix R

3.14 ANI Bulletin No. 5(79)

3.15 HEMYC Test CIP-1026

#### 4.0 DEFINITIONS

SYSTEM - a cable tray, conduit, or junction box (single or multiple) to be protected with the wrap system. For the purposes of this procedure a system is limited to a single floor elevation.

#### 5.0 RESPONSIBILITY

5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the applicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc., to the department responsible for installation.

This department shall also be responsible to provide liason with applicable client and other internal departments to assure smooth flow of communication.

5.2 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the identification and scheduling of work to be performed as defined on the documents furnished by B&B ENGINEERING.

5.3 The authorized installer's PRODUCTION DEPARTMENT shall be responsible for the performance of installation activities herein prescribed.

5.4 INSULCO, INC. QUALITY ASSURANCE DEPARTMENT shall be responsible that appropriate inspection, documentation and monitoring is provided as established in the applicable INSULCO and/or B&B Insulation Quality Control Procedures.



The quality activities may be performed by the Quality Control Department of any affiliate company of INSULCO, INC. or by any organization granted written authorization by the INSULCO QUALITY ASSURANCE DEPARTMENT utilizing the established INSULCO QC Procedures. If this is the case, INSULCO QA maintains the responsibility for the QA/QC of the system installation and shall certify that the installed system is consistent with the qualification tested system design.

B 6.0 PROCEDURE

The INSULCO/HEMYC Protective Wrap Schematic (Form QC-63) shall be completed utilizing the steps as defined herein.

6.1 STEP ONE (See Figure 1 for example)

An installer's site engineering representative shall prepare the initial schematic illustrating the routing and placement of the system to be proposed. This shall be performed as a result of an actual job walkdown and evaluation. The information listed below shall be inserted in the appropriate locations on the form.

GENERAL

- 6.1.1 Schematic No. - Numerical control number assigned to this specific schematic.
- 6.1.2 Rev. A - Number of revision to this specific schematic (if applicable).
- 6.1.3 Project Ref. - Job Number and Name reference of the Project.
- 6.1.4 Area - Area, room, etc., within the plant where the proposed system is located.
- 6.1.5 Elev. - Floor elevation where located.
- 6.1.6 Dwg. Ref. - Applicable drawing(s) normally supplied by client.

B&B ENGINEERING

- 6.1.7 Date - Date of initial walkdown and initiation of form.
- 6.1.8 By - Signature of installer's site engineering representative performing walkdown.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

- 6.1.9 System Description - Conduit(s), Cable Tray(s), Junction Box(es) identification numbers and description of all such items involved.
- 6.1.10 Length - Approximate length of proposed system.
- 6.1.11 Interferences - Interferences, obstructions, areas of difficult accessibility, etc.

DRAWING

- 6.1.12 - Sketch illustrating the routing and placement of proposed system.
- 6.1.13 - Approximate stop and stop column/grid identifications (alphabetical and/or numerical).
- 6.1.14 - Additional views as necessary for clarification purposes.

After incorporation of items referenced above, the Schematic sheet shall then be transmitted to B&B Site Engineering for further action.

6.2 STEP TWO (See Figure 2 for example)

After receipt of the initial Schematic from the B&B Engineering representative performing such action, B&B Site Engineering shall perform the following functions.

- 6.2.1 Proposed detail number(s) to be used in any given area or section of the system shall be added to the sketch.
- 6.2.2 Additional information, as required, for clarification purposes shall also be placed in the appropriate areas of the sheet.
- 6.2.3 Areas that cannot be referenced to a typical detail shall be noted and a sketch attached to illustrate alternate method(s) proposed.
- 6.2.4 After B&B Site Engineering appropriate action and concurrence the individual performing such actions shall place the date and his signature in the Date 2 and By 2 section of the B&B Engineering block.

This Schematic sheet shall then be transmitted to Client for approval of proposed installation.



6.3 STEP THREE See Figure 3 for example)

Client's engineering representative shall examine the Schematic upon receipt from B&B's Site Engineering.

6.3.1 If no comments on Schematic from client, the ACCEPT box shall be checked and Schematic returned to B&B Site Engineering. This constitutes client acceptance of the proposed system construction and releases the specific system for construction.

6.3.2 If client does not accept the proposed system design, the REJECT box shall be checked and comments noted to illustrate reasons.

6.3.3 The client's engineer performing activities listed in 6.3.1 and 6.3.2 shall signify by inserting date and signature in the applicable spaces.

6.4 STEP FOUR (See Figure 4 for example)

Upon receipt of the Schematic from client engineering, the B&B site engineering shall perform the following activities.

6.4.1 If client has checked the ACCEPT box, and released the system for construction, appropriate measures shall be taken to release necessary fabrication orders or to procure applicable wraps from stocks on site.

6.4.2 If client has checked the REJECT box and supplied comments B&B site engineering shall respond to comments within five (5) working days after receipt from client.

6.4.3 Any Schematic denoted as REJECT must proceed through steps outlined in 6.3 after resolution of comments. This shall be repeated until client acceptance is granted.

6.5 INSTALLATION (See Figure 4 for example)

6.5.1 B&B Site Engineering shall be responsible that the appropriate wraps are released to Production for installation.

6.5.2 The applicable wrap identification numbers shall be denoted on the sketch by either B&B Engineering or B&B QC to assure traceability.

6.5.3 Any major field changes from proposed installation previously accepted by client engineering shall be pre-approved by client and be so noted on schematic. The change shall be "clouded" and initialed by authorized client representative.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

## 6.6 DOCUMENTATION

6.6.1 The completed Schematic shall become an integral part of the QC documentation including, but not limited, to the following:

- a) QC-59 Fabrication Order
- b) Form QC-62 Hold Point Inspection & Client Final Signoff
- c) Applicable Client and Installer's drawings
- d) Other quality documentation relevant to cable wrap installation such as Inspection Reports, NCR's, etc.

## 7.0 ATTACHMENTS

- 7.1 Figure 1  
B&B Form QC-63 SCHEMATIC  
Step One
- 7.2 Figure 2  
B&B Form QC-63 SCHEMATIC  
Step Two
- 7.3 Figure 3  
B&B Form QC-63 SCHEMATIC  
Step Three
- 7.4 Figure 4  
B&B Form QC-63 SCHEMATIC  
Step Four

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



INSULCO/HEMYC  
PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +46  
PROJECT REF: FS667-Waterford 3 DRG REF: G252-SIS

B&B ENGINEERING		CLIENT RELEASE FOR CONSTRUCTION	
1. Date: <u>3-23-83</u>	By: <u>Tom Moody</u>	<input type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT-see comments below
2. Date: _____	By: _____	Comments: _____	
System Description: <u>2" Conduit - 36388-SAB</u>		_____	
Length: <u>75'</u>		_____	
Interferences, etc. <u>3 Hangers</u>		Date: _____ By: _____	
_____		_____	

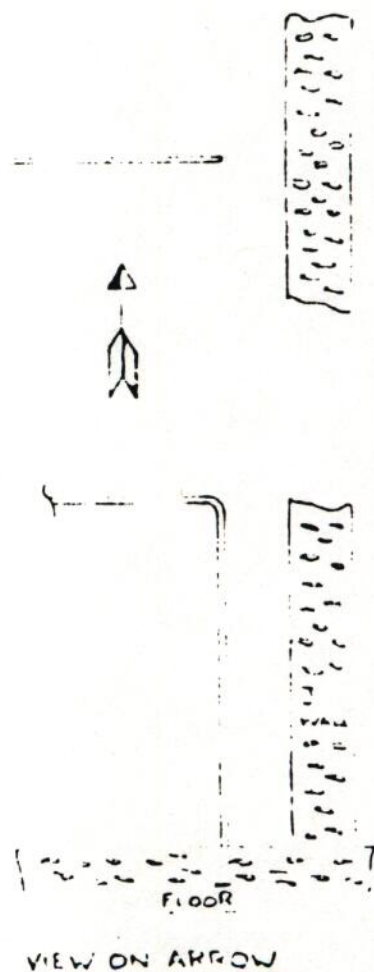
N ←

63475 SAB

**EXAMPLE**

FIGURE 1

Step One - Action performed by installer's engineer after job walkdown.



INSULATED/HEATED  
PROTECTIVE WRAP SCHEMATIC

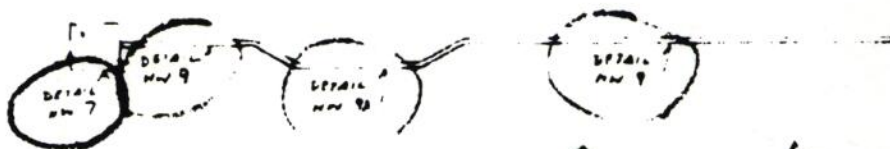
----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +46  
PROJECT REF: FS667-Waterford 3 DRG REF: G252-SIS

B&B ENGINEERING	CLIENT RELEASE FOR CONSTRUCTION
1. Date: <u>3-23-83</u> By: <u>Red Moody</u>	<input type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT-see comments below
2. Date: <u>3-24-83</u> By: <u>J. Chang</u>	Comments: _____
System Description: <u>2" Concrete - 3/8" SAE</u>	_____
Length: <u>75'</u>	_____
Interferences, etc.: <u>3 Hangers</u>	Date: _____ By: _____

N ←

63-75 SAE



**EXAMPLE**

FIGURE 2

Step Two - Circled items are actions performed by installer's site engineering office prior to submittal to client.



VIEW ON ARROW



PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +96  
PROJECT REF: ES667-Waterford 3 DRG REF: G252-SIS

<b>BAR ENGINEERING</b>		<b>CLIENT RELEASE FOR CONSTRUCTION</b>	
1. Date: <u>3-23-83</u>	By: <u>RA Moody</u>	<input checked="" type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT-see comments below
2. Date: <u>3-24-83</u>	By: <u>Q. Davis</u>	Comments: _____	
System Description: <u>2" Conduit - 36388-SAB</u>			
Length: <u>75'</u>			
Interferences, etc. <u>3 Hangers</u>			
		Date: <u>3/25/83</u> By: <u>M. Smith</u> <u>Chas. set</u>	

N ←

63475 SAB

DETAIL NW 7

DETAIL NW 9

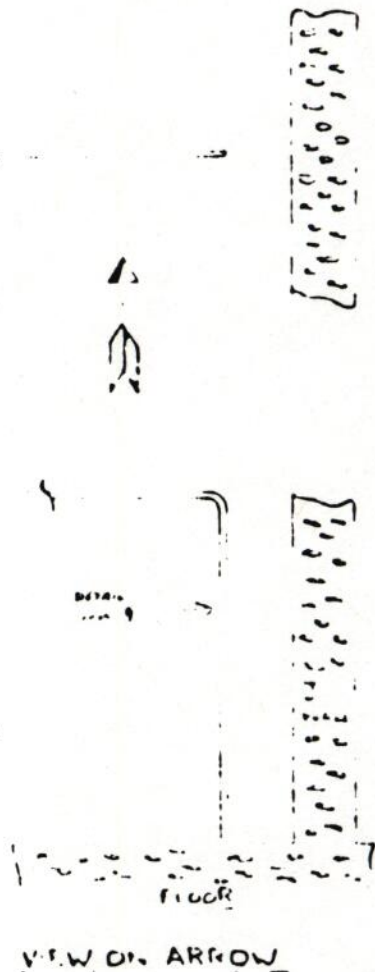
DETAIL NW 8

DETAIL NW 9

**EXAMPLE**

FIGURE 3

Step Three - Circled items are actions performed by client engineering representative, illustrating either ACCEPT or REJECT of the proposed installation.



INSULCO/HEMYC  
PROTECTIVE WRAP SCHEMATIC

----- SCHEMATIC -----

SCHEMATIC NO: 015 REV: 0 AREA: RAB ELEV: +46  
PROJECT REF: FS667-Waterford 3 DRG REF: G252-515

BAB ENGINEERING

1. Date: 3-23-83 By: A. J. Neady  
2. Date: 3-24-83 By: J. J. Neady  
System Description: 2" Conduit - 36388-SAB

Length: 75'  
Interferences, etc. 3 hangers

CLIENT RELEASE FOR CONSTRUCTION

☒ ACCEPT ☐ REJECT-see comments below  
Comments: \_\_\_\_\_

Date: 3/25/83 By: M. J. Neady  
9 hangers

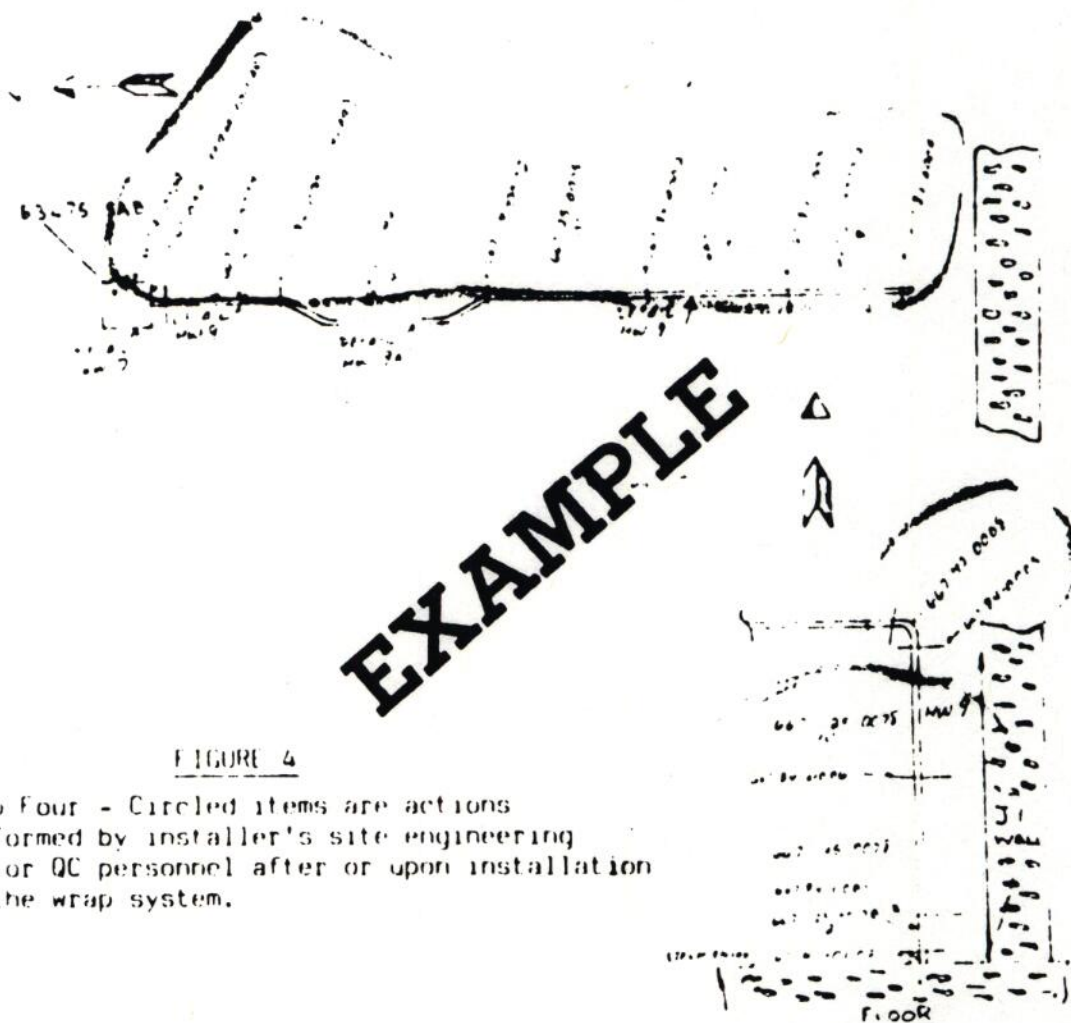


FIGURE 4

Step Four - Circled items are actions performed by installer's site engineering and/or QC personnel after or upon installation of the wrap system.

Joe Jones  
RAB OC  
Form 62-607/021  
3/21/83

VIEW ON ARROW



# IBB INSULATION, INC.

<b>PROCEDURE FOR:</b> INSTALLATION OF INSULCO/HEMYC PROTECTIVE WRAP SYSTEM ONTO CABLE DROPS	<b>PROCEDURE NUMBER:</b> <u>8400.112</u>
---	---

## PROCEDURE ISSUE SUMMARY

ISSUE/DATE	PREPARER	APPROVED	COMMENTS
A DRAFT 3/30/84	<i>D. L. Failor</i> D. L. Failor	<i>L. C. Spriggs</i> L. C. Spriggs	For Review and Comment
B ISSUE 4.13.84	<i>D. Zachmeyer</i> D. Zachmeyer	<i>L. C. Spriggs</i> L. C. Spriggs <i>E. L. Brault</i> E. L. Brault	Issue for construction

9308270309 930813  
PDR ORQ NRRB  
PDR

06/01/82

supercedes previous  
QC 5, QC 5a & QC 6

P.O. BOX 2531 • HOUSTON, TEXAS 77001 • (713) 688-8971

INSTALLATION OF INSULCO/HEMYC PROTECTIVE WRAP  
SYSTEM ONTO CABLE DROPS

1.0 PURPOSE

The purpose of this Procedure is to assure that the installation of the INSULCO/HEMYC Protective Wrap System is consistent with system as tested on the various qualification tests. The Fire Qualification Test, referenced as B&B CIP-1026, consisted of a One (1) Hour Fire Exposure, per ASTM E-119 criteria, including hose stream test in accordance with the AMERICAN NUCLEAR INSURERS Information Bulletin 5(79) entitled, "ANI/MAERP STANDARD FIRE ENDURANCE TEST METHOD TO QUALIFY A PROTECTIVE ENVELOPE FOR CLASS 1E ELECTRICAL CIRCUITS".

2.0 SCOPE

This Procedure provides the methods and guidelines to be utilized for the installation of INSULCO/HEMYC Protective Wrap Systems for conduits.

3.0 REFERENCES

- 3.1 10CFR50, Appendix R
- 3.2 ANI Bulletin 5(79)
- 3.3 B&B Installation Procedure No. 8400.103, INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM - ONTO SINGLE OR MULTIPLE CONDUITS
- 3.4 B&B Installation Procedure No. 8400.104, INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM - AROUND INTERFERENCES AND OBSTRUCTIONS.
- 3.5 B&B Installation Procedure No. 8400.106, INSTALLATION PROCEDURE FOR INSULCO/HEMYC PROTECTIVE WRAP SYSTEM - FOR CABLE TRAY(S) AND CONDUITS

4.0 DEFINITIONS

CLIP - stainless steel metal clip used to hold banding in place.  
CERABLANKET or KAOWOOL - 2" thick ceramic fiber blanket.  
COLLAR - a blanket used at wrap joints on conduit and/or cable wrap in place of wrap overlap.  
CLAMP - stainless steel or galvanized hose type clamp or stainless steel banding.  
STRIP - 2" Cerablanket cut in various width to allow 2" air space between Cable and Blanket Wrap.

5.0 RESPONSIBILITY

- 5.1 The authorized installer's ENGINEERING DEPARTMENT shall be responsible to define the scope of work as prescribed on the ap-

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE



ISSUE:

B ISSUE  
04/13 84

**IB**  
**INSULATION, INC.**

NO: 8400.112

PAGE: 3 of 4

plicable contract documents and provide the appropriate drawings, specifications, requirements, instructions, etc. to the department responsible for installation.

#### 6.0 PROCEDURE

B

- 6.1 Cut 2" ceramic fiber blanket in approximate 3" wide strips, place around cable(s) and secure. Space the 3" wide strips on maximum 9" centers. A minimum of 2" air space is required between cable and blanket wrap.
- 6.2 Additional 3" wide strips of 2" ceramic fiber blanket may be utilized in order to maintain 2" air space.
- 6.3 Place 2" blanket wrap around 3" wide strips and cable. Banding to be placed around blanket wrap at point over 3" wide strip. Blanket must overlap a minimum of 3". Outside (blanket wrap band) banding is to be placed over the 3" wide strips only.  
  
Tighten banding until blanket is compressed 1/4" to 1/2".  
Do Not Over-Tighten.
- 6.4 At blanket wrap joints, or overlap, a 2" ceramic fiber blanket cut in approximate 6" wide strip should be used around cable. See Procedure 8400.103, Section 6.9 for detail of blanket wrap.
- 6.5 For termination to wall, floor or ceiling, use Procedure 8400.105 Conduit.
6. Cable drops into Cable Tray Wrap System use Procedure 8400.104, Section 6.1 Penetrating member.

ISSUE DESIGNATION IN THIS COLUMN INDICATES CURRENT CHANGE

NOTE:  
Prefabricated blanket section dimensions determined by installers on a case by case basis. Silt Temp and fiberglass to be seen with fire retardant Astroquartz or similar thread.

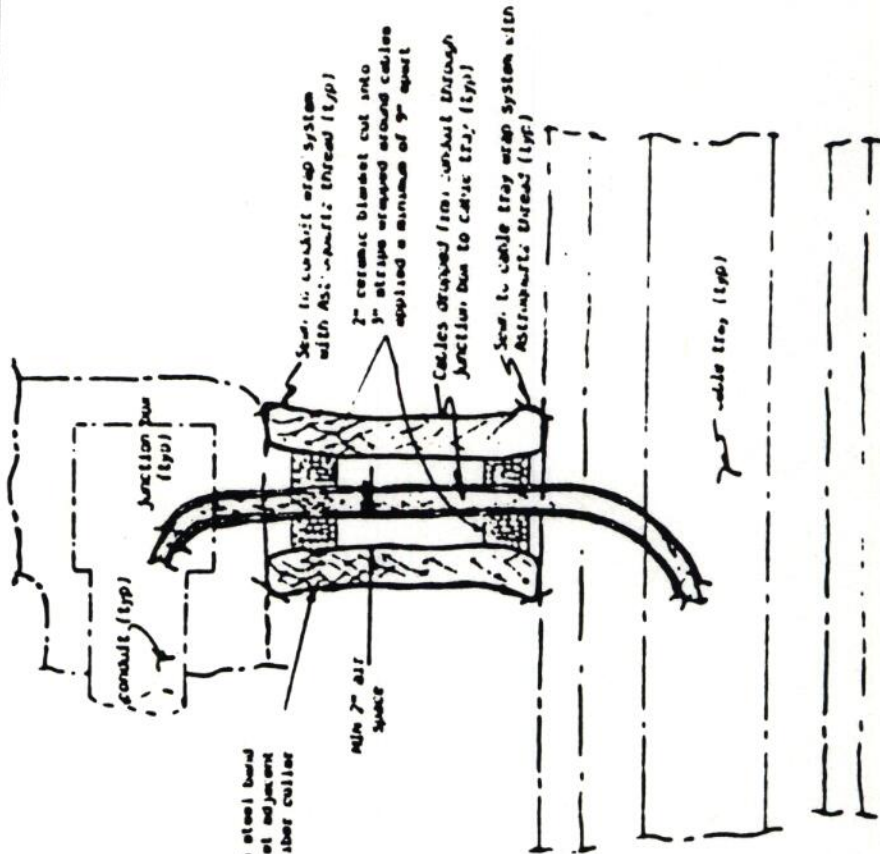
Silt Temp 600/50 on outer cover (flame side)  
overlapping minimum of 3" on interior side

3" stainless steel band  
around blanket adjacent  
to ceramic fiber collar

1.25" stainless steel band - 400/50  
or similar on interior side

Astroquartz thread to attach  
blanket together at overlap

Astroquartz thread at  
junction of Silt Temp and  
Fiberglass (typ)



TYPICAL INSULATION  
OF CABLE TRAY W/ AIR SPACE

SECTION C-C  
CABLE TRAY W/ AIR SPACE  
(TEST TOL)

REVISIONS		APPROVED	
NO.	DATE	BY	CHK
1	3-13-84	KMS	
2			
3			
4			

HEAVY SYSTEM			
CABLE TRAY W/ AIR SPACE			
DESIGNED BY	LC3	DATE	7/15/82
CHECKED BY		DATE	
APPROVED BY		DATE	